



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Charles Frederick James BARNES Conf. No.: 5982

Appln. No.: 10/690,569 Group Art Unit: 2655

Filed: October 23, 2003 Examiner: Unknown

For: INFORMATION STORAGE SYSTEMS

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. §§ 1.97 and 1.98

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form which the Examiner may deem material to patentability of the claims of the above-identified application.

A copy of each of the listed documents (other than any U.S. patents and/or publications), is submitted herewith.

The present Information Disclosure Statement is being filed after three months from the application's filing date; but before the mailing date of the first Office Action on the merits. Therefore, no Statement under 37 C.F.R. § 1.97(e) or fee under 37 C.F.R. § 1.17(p) is required.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed

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document as a competent reference against the claims of the present application.

Respectfully submitted,

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washington office 23373 customer number

Date: May 20, 2004

- 2 -

Substitute for Form 1449 A & B/PTO	Con	Complete if Known		
	Application Number 10/690,569			
P E ENFORMATION DISCLOSURE STATEMENT BY APPLICANT	Confirmation Number	5982		
P STATEMENT BY APPLICANT	Filing Date	October 23, 2003		
	First Named Inventor	Charles Frederick James BARNES		
MAY 2 0 2004 Ease as many sheets as necessary)	Art Unit	2655		
1 * /	Examiner Name	Unknown		
Shee 1 of 2	Attorney Docket Number	Q-72585		
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U.S. PATENT DOCUMENTS							
Examiner Cite No.1	Cita	Document Number		Publication Date			
		Number	Kind Code ² (if known)	MM-DD-YYYY	Name of Patentee or Applicant of Cited Document		
		US 6,272,083		08/07/2001	Aratani		
		US 6,078,471		06/20/2000	Fisk		
		US 6,353,317		03/05/2002	Green et al		
		US 5,606,474		02/25/1997	Ketchersid III		
		US 6,081,402		06/27/2000	Cho		
		US 5,264,975		11/23/1993	Bajoreket et al		
		US 6,320,725		11/20/2001	Payne et al		
		US 5,212,680		05/18/1993	Toupin		
		US 5,739,975		04/14/1998	Parks et al		
		US 4,903,151		02/20/1990	Mizukami et al		
		US 4,636,893		01/13/1987	McClure		
		US 5,227,211		07/13/1993	Eltoukly et al		
		US 5,995,338		11/30/1999	Watanabe et al		

FOREIGN PATENT DOCUMENTS							
Examiner	Cite	Foreign Patent Document		Publication Date	Name of Patentee or		
Initials*	No.1	Country Code ³	Number ⁴	Kind Code ⁵ (if known)	MM-DD-YYYY	Applicant of Cited Document	Translation ⁶

		NON PATENT LITERATURE DOCUMENTS	•
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation ⁶
		Carley et al, Communication of the ACM, 43(11):73-80 (2000)	
		Solin et al, "Giant Magneto Resistance in Zero-gap HgCdTe", www.neci.nj.nec.com/homepages/thio/gmr.htm]
		"Composite Diamond Coating", Information Sheet, www.surfacetechnology.com	
		"Artificial Diamond Coating and Thin Film Technologies", Information Sheet, Technologies of RRC Kurchatov Institute www.kiae.ru/eng/str/technology/t8.html	
		"Diamond Films for Microelectromechanical Systems (MEMS), Information Sheet, www.techtransfer.anl.gov/techtour/diamondmems.html	
		Mohn, Nature, 400:18-19 (1999)	
		"Glass Substrate for Magnetic Disk in HDD, Information sheet, http://www7.big.or.jp/~cgi19786/ngf/nglass/ng06e.hmtl	
		"Zero Expansion Glass and Glass Ceramics", Information sheet, http://www7.big.or.jp/~cgi19786/ngf/nglass/ng06e.hmtl	
		"Ultra Low Expansion Glass", Information sheet, www.pgo-online.com/intl/jse/frameroute/genericset.html?Content=/intl/katalog/ule.hmtl	
		Aschke, "Fit for Future Chip Technology", Company Profile on Schnott Lithotec, hppt://www.schott.com/magazine/English/download/info99/si099_02_euvl.pdf	
-		"Controlled Expansion Alloys", Comparison Table from Daido-Special Metals LTD, http://www.dsml.co.jp/english/controlled_expansion.htm	
		McDaniel, "Vsuvius Zyarock", A Cookson Company Information Sheet, hppt://www.techceramics.com/fusedsilica.html	

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Signature	Date Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or in the comment box of this document. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to indicate here if English language Translation is attached.

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2

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FOREIGN PATENT DOCUMENTS								
Examiner	Cite	Foreign Patent Document		Publication Date	Name of Patentee or			
Initials*		MM-DD-YYYY	Applicant of Cited Document	Translation ⁶				
		EP	0 463 908		06/11/1991	Thomson-CSF	Abstract	
		EP	0 895 237		02/03/1999	Samsung Electronics Co., Ltd.		
		EP	1 114 393		07/11/2001	Sumitomo Electric Industries, Ltd.		
_		ÉP	1 156 479		11/21/2001	Mitsubishi Chemical Corporation		
		EP	1 381 031		01/14/2004	Jean-Pierre NOZIERES		

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials*	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation ⁶
		"Thermal Properties, GE Quartz, http://www.gequartz.com/en/thermal.htm	Info Sheet
		"The Art of the Quantum Leap", Economist Story,	
		http://www.economist.com/science/tq/displayStory.cfm?Story_ID=885080	1
	Ì	"Giant Magnetoresistance", http://srdweb2.dl.ac.uk/srs/other/ow/MAGNETISM/Giant_Magneto.html	Info Sheet
-		"Lubricants for disks", http://www.almaden.ibm.com/st/projects/lubricants/lube/	Info Sheet- Pg Discont.
		"M5.004 Challenges of Head-Disk Interface Tribiology for Ultrahigh Density Magnetic Recording", Invited Session by Jing Gui; http://www.eps.org/aps/meet/MAR00/baps/abs/S4840004.html	
		"Tribology of Magnetic Media and Recording Technologies"	Intro page
		"Technology Research and Development - Basics of Magnetic Recording", http://www.infomrt.com/readrite/magbasis.html	Info Sheet
		"HMT Delivers Volume Shipments of Advanced GMR Media to Maxtor", http://www.semiconductorfabtech.com/industry.news/9911/10.02.shtml	News Story
		"Evolution of HSS Head"	Info Sheet
		"Technology", Headway Technologies, http://www.hdwy.com/technology/technology.hmtl	Article
		Caruso et al, "A New Perspective on Magnetic Field Sensing", http://www.et.byu.edu/eit444/Links/SensorsDec1998/SensorsMagFieldDec1998.shtml	
		Singer, "Hard Disk Recording Aims to Get Perpendicular", http://www.reed-electronics.com/semiconductor/article/CA240215?text=hard+disk+recording+aims+to+get+perpendicular	
•		Brain, "How Hard Disks Work", www.howstuffworks.com/hard-disk.htm	
		"Fujitsu and Sony Develop World's First 1.3GB 3.5-inch MO Disk System Prototype; http://pr.fujitsu.com/jp/news/1998/Nov/5-e.hmtl	News Article
		"Hard Disk Tutorial", http://stweb.peel.edu.on.ca/pcsweb/Pc_tut/04disks.htm	
		"Giant Magnetoresistance When Big Hard Drives Aren't Big Enough", http://www.wired.com/archive/4.05/geek/hmtl	Article
		"Headway Technologies", http://www.hdwy.com/technology/technology.html	Article
		"Single vs. Multiple Actuators", http://www.pcguide.com/ref/hdd/op/actMultiple-c.html	Article
		"Storage/Hard Disks", http://www.pctechguide.com/04disks.htm	Info Sheet
		"What is RAID?", http://www.uni-mainz.de/~neuffer/scsi/what_is_raid.html	Article

Examiner			
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